L Number	Hits	Search Text	DB	Time stamp
1	186390	(semicondctor adj laser) or (end adj face) or end-face or (laser adj bar)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/08/12 17:25
2	0	((semicondctor adj laser) or (end adj face) or end-face or (laser adj bar)) same ebpvd	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/08/12 17:29
3	0	((semicondctor adj laser) or (end adj face) or end-face or (laser adj bar)) and ebpvd	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/08/12 17:29
4	492	((semicondctor adj laser) or (end adj face) or end-face or (laser adj bar)) same (electron adj beam)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/08/12 17:30
5	64	(((semicondctor adj laser) or (end adj face) or end-face or (laser adj bar)) same (electron adj beam)) same (angle or incident)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/08/12 17:40
6	4208	((semicondctor adj laser) or (end adj face) or end-face or (laser adj bar)) with coat$3	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/08/12 17:40
7	56	(((semicondctor adj laser) or (end adj face) or end-face or (laser adj bar)) with coat$3) same (((vapor or vacuum) near3 deposit$4) or $3pvd or (vacuum near3 evaporat$4))	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/08/12 18:09
8	7	(("5911830") or ("6037006") or ("5989932") or ("6258403")).PN.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/08/12 18:13
9	5	("4391696" | "4397724" | "5063173" | "5154333" | "5171717").PN.	USPAT	2003/08/12 18:11
10	6	jp-2000307183-$.did. or jp-11317565-$.did. or jp-08250814-$.did.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/08/12 18:14

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* * * * * * * * * *   Welcome to STN International   * * * * * * * * * *

 NEWS  1            Web Page URLs for STN Seminar Schedule - N. America
 NEWS  2            "Ask CAS" for self-help around the clock
 NEWS  3   Feb 24   PCTGEN now available on STN
 NEWS  4   Feb 24   TEMA now available on STN
 NEWS  5   Feb 26   NTIS now allows simultaneous left and right truncation
 NEWS  6   Feb 26   PCTFULL now contains images
 NEWS  7   Mar 04   SDI PACKAGE for monthly delivery of multifile SDI results
 NEWS  8   Mar 24   PATDPAFULL now available on STN
 NEWS  9   Mar 24   Additional information for trade-named substances without
                    structures available in REGISTRY
 NEWS 10   Apr 11   Display formats in DGENE enhanced
 NEWS 11   Apr 14   MEDLINE Reload
 NEWS 12   Apr 17   Polymer searching in REGISTRY enhanced
 NEWS 13   Jun 13   Indexing from 1947 to 1956 added to records in CA/CAPLUS
 NEWS 14   Apr 21   New current-awareness alert (SDI) frequency in
                    WPIDS/WPINDEX/WPIX
 NEWS 15   Apr 28   RDISCLOSURE now available on STN
 NEWS 16   May 05   Pharmacokinetic information and systematic chemical names
                    added to PHAR
 NEWS 17   May 15   MEDLINE file segment of TOXCENTER reloaded
 NEWS 18   May 15   Supporter information for ENCOMPPAT and ENCOMPLIT updated
 NEWS 19   May 19   Simultaneous left and right truncation added to WSCA
 NEWS 20   May 19   RAPRA enhanced with new search field, simultaneous left and
                    right truncation
 NEWS 21   Jun 06   Simultaneous left and right truncation added to CBNB
 NEWS 22   Jun 06   PASCAL enhanced with additional data
 NEWS 23   Jun 20   2003 edition of the FSTA Thesaurus is now available
 NEWS 24   Jun 25   HSDB has been reloaded
 NEWS 25   Jul 16   Data from 1960-1976 added to RDISCLOSURE
 NEWS 26   Jul 21   Identification of STN records implemented
 NEWS 27   Jul 21   Polymer class term count added to REGISTRY
 NEWS 28   Jul 22   INPADOC: Basic index (/BI) enhanced; Simultaneous Left and
                    Right Truncation available
 NEWS 29   AUG 05   New pricing for EUROPATFULL and PCTFULL effective
                    August 1, 2003

 NEWS EXPRESS  April 4 CURRENT WINDOWS VERSION IS V6.01a, CURRENT
               MACINTOSH VERSION IS V6.0b(ENG) AND V6.0Jb(JP),
               AND CURRENT DISCOVER FILE IS DATED 01 APRIL 2003
 NEWS HOURS    STN Operating Hours Plus Help Desk Availability
 NEWS INTER    General Internet Information
 NEWS LOGIN    Welcome Banner and News Items
 NEWS PHONE    Direct Dial and Telecommunication Network Access to STN
 NEWS WWW      CAS World Wide Web Site (general information)

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FILE 'HOME' ENTERED AT 17:53:48 ON 12 AUG 2003

=> fila caplus
FILA IS NOT A RECOGNIZED COMMAND
The previous command name entered was not recognized by the system.
For a list of commands available to you in the current file, enter
"HELP COMMANDS" at an arrow prompt (=>).
```

```
=> s laser(w)bar?
THIS COMMAND NOT AVAILABLE IN THE CURRENT FILE
Some commands only work in certain files.  For example, the EXPAND
command can only be used to look at the index in a file which has an
index.  Enter "HELP COMMANDS" at an arrow prompt (=>) for a list of
commands which can be used in this file.

=> s laser bar?
THIS COMMAND NOT AVAILABLE IN THE CURRENT FILE
Some commands only work in certain files.  For example, the EXPAND
command can only be used to look at the index in a file which has an
index.  Enter "HELP COMMANDS" at an arrow prompt (=>) for a list of
commands which can be used in this file.

=> file caplus
COST IN U.S. DOLLARS                              SINCE FILE     TOTAL
                                                       ENTRY   SESSION
FULL ESTIMATED COST                                     0.42      0.42

FILE 'CAPLUS' ENTERED AT 17:54:41 ON 12 AUG 2003
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FILE COVERS 1907 - 12 Aug 2003  VOL 139 ISS 7
FILE LAST UPDATED: 11 Aug 2003  (20030811/ED)

  This file contains CAS Registry Numbers for easy and accurate
  substance identification.


=> s laser(w)bar?
        433312 LASER
        709266 BAR?
L1         311 LASER(W)BAR?

=> s l1 same coat?
MISSING OPERATOR L1 SAME
The search profile that was entered contains terms or
nested terms that are not separated by a logical operator.

=> s l1 and coat?
        921710 COAT?
L2          24 L1 AND COAT?

=> d 1-24 ti

L2   ANSWER 1 OF 24  CAPLUS  COPYRIGHT 2003 ACS on STN
Citing References
TI   End face coating method of semiconductor laser [Machine Translation].

L2   ANSWER 2 OF 24  CAPLUS  COPYRIGHT 2003 ACS on STN
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Citing References

TI An overview on tailored tribological and biological behavior of diamond-like carbon

L2 ANSWER 3 OF 24 CAPLUS COPYRIGHT 2003 ACS on STN

Citing References

TI Method of manufacturing semiconductor lasers with diffraction gratings

L2 ANSWER 4 OF 24 CAPLUS COPYRIGHT 2003 ACS on STN

Citing References

TI Diode laser modules of highest brilliance for materials processing

L2 ANSWER 5 OF 24 CAPLUS COPYRIGHT 2003 ACS on STN

Citing References

TI Method for fabricating high speed Fabry-Perot lasers for data communication

L2 ANSWER 6 OF 24 CAPLUS COPYRIGHT 2003 ACS on STN

Citing References

TI Method for **coating** facet edges of an optoelectrical device

L2 ANSWER 7 OF 24 CAPLUS COPYRIGHT 2003 ACS on STN

Citing References

TI The end face method of processing of the semiconductor laser componentand the jig which is used for that. [Machine Translation].

L2 ANSWER 8 OF 24 CAPLUS COPYRIGHT 2003 ACS on STN

Citing References

TI Production method of semiconductor laser component, and packaging method of semiconductor laser component. [Machine Translation].

L2 ANSWER 9 OF 24 CAPLUS COPYRIGHT 2003 ACS on STN

Citing References

TI Method and apparatus for retaining and releasing **laser bars** during a facet **coating** operation

L2 ANSWER 10 OF 24 CAPLUS COPYRIGHT 2003 ACS on STN

Citing References

TI Jig for surface treatment of semiconductor laser device

L2 ANSWER 11 OF 24 CAPLUS COPYRIGHT 2003 ACS on STN

Citing References

TI Method and fixture for **laser bar** facet **coating**

L2 ANSWER 12 OF 24 CAPLUS COPYRIGHT 2003 ACS on STN

Citing References

TI Highly reliable 40-W cw InGaAlAs/GaAs 808-nm **laser bars**

L2 ANSWER 13 OF 24 CAPLUS COPYRIGHT 2003 ACS on STN

Citing References

TI Method of making a GaAs-based laser comprising a facet **coating** with gas phase sulfur

L2 ANSWER 14 OF 24 CAPLUS COPYRIGHT 2003 ACS on STN

Citing References

TI Jig for forming optical film on semiconductor laser facet

L2 ANSWER 15 OF 24 CAPLUS COPYRIGHT 2003 ACS on STN

Citing References

TI Fluorine dopant in wear-resistant glass windows for **laser bar** code scanners

L2 ANSWER 16 OF 24 CAPLUS COPYRIGHT 2003 ACS on STN

Citing References

TI Abrasion- and wear-resistant **coated** substrate products

L2 ANSWER 17 OF 24 CAPLUS COPYRIGHT 2003 ACS on STN

Citing References

TI Highly abrasion-resistant, flexible **coatings** for soft substrates

L2 ANSWER 18 OF 24 CAPLUS COPYRIGHT 2003 ACS on STN

Citing References

TI Abrasion wear resistant **coated** substrate product

L2 ANSWER 19 OF 24 CAPLUS COPYRIGHT 2003 ACS on STN

Citing References

TI Off-axis laser deposition of $YBa_2Cu_3O_{7-\delta}$ thin films and $SrTiO_3$ insulation layers

L2 ANSWER 20 OF 24 CAPLUS COPYRIGHT 2003 ACS on STN

Citing References

TI Reliability of aluminum-free 808 nm high-power laser diodes with uncoated mirrors

L2 ANSWER 21 OF 24 CAPLUS COPYRIGHT 2003 ACS on STN

Citing References

TI Commercial applications of ion beam deposited diamond-like carbon (DLC) **coatings**

L2 ANSWER 22 OF 24 CAPLUS COPYRIGHT 2003 ACS on STN

Citing References

TI Abrasion resistant diamond-like carbon films for optical applications

L2 ANSWER 23 OF 24 CAPLUS COPYRIGHT 2003 ACS on STN

Citing References

TI Abrasion-resistant **coated** glass substrate product.

L2 ANSWER 24 OF 24 CAPLUS COPYRIGHT 2003 ACS on STN

Citing References

TI 10 Watt CW diode **laser bar** efficiently fiber coupled to a 381 µm diameter fiber optic connector

=> **d 19 all**

L2 ANSWER 19 OF 24 CAPLUS COPYRIGHT 2003 ACS on STN

Full Text | Citing References

AN 1995:709597 CAPLUS

DN 123:272615
TI Off-axis laser deposition of $YBa_2Cu_3O_{7-\delta}$ thin films and $SrTiO_3$ insulation layers
AU Holzapfel, B.; Roas, B.; Schultz, L.; Saemann-Ischenko, G.
CS Research Laboratories, SIEMENS AG, Erlangen, D-91050, Germany
SO Transactions of the Materials Research Society of Japan (1994), 17(Laser and Ion Beam Modification of Materials), 341-4
CODEN: TMRJE3; ISSN: 1382-3469
PB Elsevier
DT Journal
LA English
CC 76-4 (Electric Phenomena)
Section cross-reference(s): 75
AB The authors report on $YBa_2Cu_3O_{7-\delta}$ thin film prepn. by a new laser deposition geometry, the so-called off-axis laser deposition. The main modification of off-axis laser deposition is the change of the substrate orientation in relation to the laser-induced plume. This results in c-axis oriented, epitaxial $YBa_2Cu_3O_{7-\delta}$ thin films with std. Jc-values (>106 A/cm^2 at 77K and zero field) and an exceptionally good surface quality. Due to this low surface roughness it is possible to prep. thin (30nm) $SrTiO_3$ insulating layers. The insulation resistance of such a SrTiO layer (between two YBCO layers) is >5MΩ. Using this off-axis geometry it is also possible to **coat** both sides of a substrate simultaneously, providing a 1-step process in double-sided thin film deposition even on large and relatively thin substrates. Identical crit. current densities (above 106 A/cm^2) were obtained for both films on the substrate.
ST laser deposition barium copper yttrium oxide; epitaxy **laser barium** copper yttrium oxide; strontium titanate insulator laser deposition
IT Electric insulators and Dielectrics
Epitaxy
Laser radiation
Superconductors
(off-axis laser deposition of $YBa_2Cu_3O_{7-\delta}$ thin films and $SrTiO_3$ insulation layers)
IT 12060-59-2P, Strontium titanate 109064-29-1DP, Barium copper yttrium oxide ($Ba_2Cu_3YO_7$), oxygen-deficient
RL: PNU (Preparation, unclassified); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(off-axis laser deposition of $YBa_2Cu_3O_{7-\delta}$ thin films and $SrTiO_3$ insulation layers)

=> **d 14 all**

L2 ANSWER 14 OF 24 CAPLUS COPYRIGHT 2003 ACS on STN
Full Text | Citing References

AN 1996:721825 CAPLUS
DN 125:342491
TI Jig for forming optical film on semiconductor laser facet
IN Okada, Nobumasa; Oosaka, Shigeo
PA Fujitsu Ltd, Japan
SO Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM H01S003-18
ICS C23C014-24; C23C014-50; H01L021-203; H01L021-68
CC 73-12 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 42, 76
FAN.CNT 1
PATENT NO. KIND DATE APPLICATION NO. DATE

PI JP 08250814	A2	19960927	JP 1995-54047	19950314
PRAI JP 1995-54047		19950314		

AB A jig for forming an optical film on semiconductor laser facets, suited for use in a film-forming process applying ion assisted deposition, comprises a hook-shaped structural body for holding the **laser bar** by the edges, thereby preventing the semiconductor laser from falling off the jig during the **coating** processes.

ST ion assisted deposition jig semiconductor laser; optical film ion assisted deposition laser

IT Vapor deposition processes
(ion assisted; jig for forming optical film on semiconductor laser facet)

IT **Coating** process
(jig for forming optical film on semiconductor laser facet)

IT Lasers
(semiconductor, jig for forming optical film on semiconductor laser facet)

=> **d 1-13 all**

L2 ANSWER 1 OF 24 CAPLUS COPYRIGHT 2003 ACS on STN

Full Text | Citing References

AN 2003:433582 CAPLUS
TI End face **coating** method of semiconductor laser [Machine Translation].
IN Morioka, Taigo
PA NEC Kansai, Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM H01S005-028
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003163410	A2	20030606	JP 2001-359462	20011126
PRAI	JP 2001-359462		20011126		

AB [Machine Translation of Descriptors]. It is to offer the end face **coating** method without of having the apprehension where purpose of this invention as operating efficiency is improved the optical thin film after the **coating**, in the work of sepg. from the semiconductor **laser bar** and the spacer on the end face of the semiconductor **laser bar**, decreases the mech. stress which joins to the semiconductor **laser bar** and makes the scratch and the crack cause. Spacer 101 after forming the specified optical thin film on the mediating/helping putting and luminous aspect 2a and luminous rear 2b, semiconductor **laser bar** in the end face **coating** method of the semiconductor laser which separates from 1 and spacer 101 between semiconductor **laser bar** 1, in spacer 101 spacer end face **coating** method of the semiconductor laser which designates that the groove 102 which when it makes with 101 and semiconductor **laser bar** stick 1 is opened outside is provided as feature.

L2 ANSWER 2 OF 24 CAPLUS COPYRIGHT 2003 ACS on STN

Full Text | Citing References

AN 2003:273442 CAPLUS
DN 139:40182
TI An overview on tailored tribological and biological behavior of diamond-like carbon
AU Hauert, R.; Muller, U.
CS Swiss Federal Laboratories for Materials Testing and Research (EMPA), Dubendorf, CH-8600, Switz.
SO Diamond and Related Materials (2003), 12(2), 171-177

CODEN: DRMTE3; ISSN: 0925-9635
PB Elsevier Science B.V.
DT Journal; General Review
LA English
CC 57-0 (Ceramics)
Section cross-reference(s): 9

AB A review. Diamond-like carbon (DLC), also known as amorphous hydrogenated carbon (a-C:H), is a class of material with variable properties. Depending on the deposition conditions and the setup used in tribol. expts., varying and even controversial results are obtained. Addnl., hydrogen, oxygen and the relative humidity have a crucial influence on the tribol. behavior. The amorphous nature of a-C:H opens the possibility to introduce different amts. of other elements into the **coating** and still maintain the amorphous phase of the **coating**. By this technique film properties such as thermal stability, hardness, tribol. properties, elec. cond., surface energy and biol. reactions of cells in contact with the surface can be tuned within a certain range. Com. applications of DLC and alloyed DLC are for example: magnetic storage media, diesel injection pumps, sliding bearings, car valve rockers, gears, tappets of racing motorcycles, **laser bar** code scanner windows in supermarkets, VCR head drums, textile industry parts. DLC has excellent tribol. properties in tech. applications, however, the literature shows contradicting results on the wear behavior of DLC-**coated** hip joints.

ST review tailored tribol biol behavior diamondlike carbon
IT Diamond-type crystals
Tribology
(overview on tailored tribol. and biol. behavior of diamond-like carbon)
IT 7440-44-0, Carbon, properties
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(overview on tailored tribol. and biol. behavior of diamond-like carbon)
RE.CNT 81 THERE ARE 81 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

(1) Affatato, S; J Biomed Mater Res 2000, V53(3), P221 CAPLUS
(2) Allen, M; Clin Mater 1994, V17(1), P1 MEDLINE
(3) Anders, S; Mater Res Soc Symp Proc 1998, V517, P371 CAPLUS
(4) Boyan, B; Biomaterials 1996, V17(2), P137 CAPLUS
(5) Butter, R; Diamond Relat Mater 1995, V4, P857 CAPLUS
(6) Butter, R; J Chem Vap Depos 1995, V3, P182 CAPLUS
(7) Chhowalla, M; Mat Res Soc Symp Proc 1996, V423, P299 CAPLUS
(8) Cutiongco, E; Trans ASME 1996, V118, P543 CAPLUS
(9) Dahan, I; Surf Coat Technol 2001, V137, P111 CAPLUS
(10) de Scheerder, I; J Invasive Cardiol 2000, V12(8), P389 MEDLINE
(11) Dearnley, P; Proc Inst Mech Eng Part H, J Eng Med 1999, V213(2), P107 MEDLINE
(12) Deng, J; Diamond Relat Mater 1995, V4(7), P936
(13) Djouadi, M; Surf Coat Technol 1999, V116-119, P508 CAPLUS
(14) Dong, H; Wear 1999, V225-229, P146 CAPLUS
(15) Donnet, C; Surf Coat Technol 1997, V94-95, P456 CAPLUS
(16) Donnet, C; Surf Coat Technol 1997, V94-95, P531 CAPLUS
(17) Donnet, C; Surf Coat Technol 1998, V100-101, P180 CAPLUS
(18) Donnet, C; Tribol Lett 1998, V4(3-4), P259
(19) Donnet, C; Tribol Lett 2000, V9(3-4), P137
(20) Dorner-Reisel, A; Thin Solid Films 2002, V420-421, P263 CAPLUS
(21) Dowling, D; Diamond Relat Mater 1997, V6(2-4), P390 CAPLUS
(22) Dowling, D; Diamond Relat Mater 1997, V6(2-4), P390 CAPLUS
(23) Dumkum, C; Diamond Relat Mater 1997, V6(5-7), P802 CAPLUS
(24) Enke, K; Appl Phys Lett 1980, V36(4), P291 CAPLUS
(25) Enke, K; Surf Coat Technol 1999, V116-119, P488 CAPLUS
(26) Erdemir, A; Surf Coat Technol 1997, V94-95, P525 CAPLUS
(27) Erdemir, A; Surf Coat Technol 2000, V133-134, P448 CAPLUS
(28) Fontaine, J; Surf Coat Technol 2001, V146-147, P286 CAPLUS
(29) Francz, G; Surf Interface Anal 1999, V28, P3 CAPLUS

(30) Fukui, H; Surf Coat Technol 2001, V146-147, P378 CAPLUS
(31) Gangopadhyay, A; Tribol Int 1997, V30(1), P9 CAPLUS
(32) Gangopadhyay, A; Tribol Lett 1998, V5(1), P25 CAPLUS
(33) Gilmore, R; Surf Coat Technol 2000, V133-134, P437 CAPLUS
(34) Gilmore, R; Thin Solid Films 2001, V398-399, P199 CAPLUS
(35) Grill, A; Diamond Relat Mater 1999, V8(2-5), P428 CAPLUS
(36) Grill, A; IBM J Res Dev 1990, V34(6), P849 CAPLUS
(37) Grill, A; IBM J Res Dev 1999, V43(1-2), P147
(38) Grill, A; Surf Coat Technol 1997, V94-95, P507 CAPLUS
(39) Grischke, M; Surf Coat Technol 1995, V74-75, P739 CAPLUS
(40) Guttler, J; Surf Coat Technol 1993, V60, P531
(41) Hauert, R; Proceedings 17th International SAMPE EUROPE Conference 1996, P367
(42) Hauert, R; Surf Coat Technol 1999, V120-121, P291 CAPLUS
(43) Hauert, R; Thin Solid Films 1997, V308-309, P191 CAPLUS
(44) Holmberg, K; Ceram Int 2000, V26(7), P787 CAPLUS
(45) Knoblauch, L; Surf Coat Technol 1997, V94-95, P521 CAPLUS
(46) Knoblauch-Meyer, L; Thin Solid Films 1999, V338, P172
(47) Kopidakis, G; Phys Rev B 1998, V58(21), P14106 CAPLUS
(48) Lappalainen, R; Diamond Relat Mater 1998, V7(2-5), P482 CAPLUS
(49) Lee, K; Mater Sci Eng A-Struct Mater 1996, V209, P264
(50) Lettington, A; Carbon 1998, V36(5-6), P555 CAPLUS
(51) Liu, Y; J Mater Sci 1997, V32(13), P3491 CAPLUS
(52) Liu, Y; Surf Coat Technol 1997, V94-95, P463 CAPLUS
(53) Misra, A; Adv Eng Mater 2001, V3(4), P217 CAPLUS
(54) Murakawa, M; Surf Coat Technol 1999, V120-121, P646 CAPLUS
(55) Neerinck, D; Thin Solid Films 1998, V317, P402 CAPLUS
(56) Oguri, K; J Mater Res 1990, V5(11), P2567 CAPLUS
(57) Onate, J; Surf Coat Technol 2001, V142-144, P1056 CAPLUS
(58) Robertson, J; Mater Sci Eng R-Rep 2002, V37(4-6), P129
(59) Robertson, J; Prog Solid State Chem 1991, V21(4), P199 CAPLUS
(60) Robertson, J; Thin Solid Films 2001, V383, P81 CAPLUS
(61) Ronkainen, H; Wear 2001, V249, P260 CAPLUS
(62) Saikko, V; Biomaterials 2001, V22(12), P1507 CAPLUS
(63) Scholes, S; Phys Med Biol 2000, V45(12), P3721 MEDLINE
(64) Schroeder, A; Biomaterials 2000, V21(5), P449 CAPLUS
(65) Schroeder, A; Ph D Thesis, Dissertation Nr 13079, ETH Zurich 1999
(66) Sheeja, D; Diamond Relat Mater 2001, V10(3-7), P1043 CAPLUS
(67) Sheeja, D; Surf Coat Technol 2001, V146-147, P410 CAPLUS
(68) Strondl, C; Surf Coat Technol 2001, V142-144, P707 CAPLUS
(69) Sundgren, J; J Vac Sci Tech A 1986, V4, P2259 CAPLUS
(70) Taube, K; Surf Coat Technol 1994, V68-69, P662
(71) Tersoff, J; Phys Rev B 1991, V44(21), P12039 CAPLUS
(72) Tiainen, V; Diamond Relat Mater 2001, V10, P153 CAPLUS
(73) Tran, H; J Invest Surg 1999, V12(3), P133 MEDLINE
(74) Vassell, W; J Mater Eng Perform 1997, V6(4), P426 CAPLUS
(75) Vercammen, K; Surf Coat Technol 2000, V133-134, P466 CAPLUS
(76) Voevodin, A; Diamond Relat Mater 1996, V5(11), P1264 CAPLUS
(77) Voevodin, A; Diamond Relat Mater 1998, V7(2-5), P463 CAPLUS
(78) Voevodin, A; Surf Coat Technol 1995, V73, P185 CAPLUS
(79) Wang, J; Thin Solid Films 1998, V325, P163 CAPLUS
(80) Wu, W; Diamond Relat Mater 1998, V7(10), P1478 CAPLUS
(81) Zehnder, T; Surf Coat Technol 2000, V133-134, P138 CAPLUS

L2 ANSWER 3 OF 24 CAPLUS COPYRIGHT 2003 ACS on STN

Full Text | Citing References

AN 2003:23454 CAPLUS
DN 138:80433
TI Method of manufacturing semiconductor lasers with diffraction gratings
IN Tsukiji, Naoki; Irino, Satoshi
PA The Furukawa Electric Co., Ltd., Japan
SO U.S. Pat. Appl. Publ., 22 pp.
CODEN: USXXCO
DT Patent
LA English

IC ICM H01L021-00
NCL 438029000; 438031000; 438032000
CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 76
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003008428	A1	20030109	US 2001-14507	20011214
	JP 2003023209	A2	20030124	JP 2001-206994	20010706
	EP 1284529	A2	20030219	EP 2002-1078	20020122

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR

PRAI JP 2001-206994 A 20010706

AB When manufg. semiconductor elements, a group of semiconductor elements having a diffraction grating formed partly on the side of the facet from which laser light is emitted is formed collectively on a semiconductor wafer by using semiconductor process technologies. The semiconductor laser elements are arranged such that the light emitting facets are opposite to each other to thereby form each diffraction grating of the semiconductor laser elements arranged opposite to each other as one diffraction grating, cleaving this diffraction grating at resp. cleavage planes to cut out **laser bars**, followed by the cleavage of cleavage planes to cut out semiconductor laser elements.

ST semiconductor laser diffraction grating fabrication
IT Cutting
Diffraction gratings
Optical waveguides
Semiconductor lasers
(method of manufg. semiconductor lasers with diffraction gratings)
IT **Coating** materials
(reflective; method of manufg. semiconductor lasers with diffraction gratings)

L2 ANSWER 4 OF 24 CAPLUS COPYRIGHT 2003 ACS on STN

Full Text | Citing References

AN 2002:572278 CAPLUS
DN 137:269974
TI Diode laser modules of highest brilliance for materials processing
AU Knitsch, Alexander; Luft, Axel; Gross, Tobias; Ristau, Detlev; Loosen, Peter; Poprawe, Reinhart
CS Fraunhofer-Institut fuer Lasertechnik, Aachen, Germany
SO Proceedings of SPIE-The International Society for Optical Engineering (2002), 4651(Novel In-Plane Semiconductor Lasers), 256-263
CODEN: PSISDG; ISSN: 0277-786X
PB SPIE-The International Society for Optical Engineering
DT Journal
LA English
CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

AB Beam quality and output power of mostly 2-dimensional stacked diode laser systems are insufficient for the demands of materials processing. To increase the output power at almost const. beam-quality, superimposition of diode **laser bars** of different wavelengths as well as polarization-multiplexing of s- and p-polarized laser beams is possible. Different techniques for wavelength-multiplexing were developed. The so-called multi-filter concept of a spanned **coated** etalon with edge-filters has turned out best. The concept features a modular design, simple adjustment and easy add-on of more wavelengths. Concerning the polarization-multiplexing the authors take advantage of the almost linear polarized diode **laser bars**. Ordinary used beam splitter cubes with a cemented structure are less qualified for high radiance. Hence the beam combination is achieved with beam displacers made of a birefringent crystal (YVO4) which provide high transmittance and convenient adaptation.

Finally an exptl. set-up with 8 diode **laser bars** of 4 different wavelengths, i.e. 8-times beam superimposition, is realized. The set-up called multiplexer obtains a radiance of ~4 x 106 W cm-2 sr-1 and outnumbers all other comparable high power diode laser systems.

ST diode laser module brilliance material processing

IT Materials processing
(diode laser modules of highest brilliance for materials processing)

IT Lasers
(multiplexers; diode laser modules of highest brilliance for materials processing)

IT Laser radiation
(superimposition of; diode laser modules of highest brilliance for materials processing)

IT 13566-12-6, Yttrium vanadate yvo4
RL: PRP (Properties)
(birefringent crystal; diode laser modules of highest brilliance for materials processing)

RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Anon; http://www.castech-us.com/yvo4.htm
(2) Bachmann, F; Physikalische Blatter 2001, V3, P63
(3) Driscoll, W; Handbook of Optics 1978
(4) Du, K; OSA TOPS 1997, V10
(5) Luft, A; Hochleistungs-Diodenlaserstapel hoher Strahldichte 2001
(6) Meschede, D; Optik, Licht und Laser 1999
(7) Niederwald, H; Schichtkunde - Schnittstelle zwischen Verfahren und Anwendung 1991
(8) Russek, U; Laser-Praxis 2001, V1, P14

L2 ANSWER 5 OF 24 CAPLUS COPYRIGHT 2003 ACS on STN

Full Text | Citing References

AN 2001:573583 CAPLUS
DN 135:129387
TI Method for fabricating high speed Fabry-Perot lasers for data communication
IN Freund, Joseph Michael; Przybylek, George John; Romero, Dennis Mark; Behringer, Robert Ewing
PA Agere Systems Inc., USA
SO U.S., 8 pp.
CODEN: USXXAM
DT Patent
LA English
IC ICM H01S003-10
ICS H01S005-00; H01S003-20
NCL 372049000
CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 76
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6272163	B1	20010807	US 1999-256574	19990224
PRAI	US 1999-256574		19990224		

AB Methods for fabricating lasers having a Fabry-Perot laser cavity structures in which the laser cavity length and/or facet reflectivity products are selected to cause the laser cavity to have a relaxation oscillation frequency of ≥10 GHz when a predetd. current bias is applied to the laser are described which entail measuring the relative intensity noise spectrum of ≥1 conventionally fabricated Fabry-Perot laser having different facet reflectivities when driven at a plurality of current biases different from the predetd. current bias and employing the data in a relation which is provided to det. the desired cleavage parameters for the **laser bar** and/or reflective **coatings** to apply to the facets.

ST cavity property detn Fabry Perot semiconductor laser fabrication
IT Semiconductor lasers
(Fabry-Perot semiconductor laser fabrication using cavity parameter detn. from relative intensity noise spectral data)
IT Semiconductor device fabrication
(of lasers; Fabry-Perot semiconductor laser fabrication using cavity parameter detn. from relative intensity noise spectral data)
RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Buus; A theoretical and Experimental Investigation of Fabry-Perot Semiconductor Laser Amplifiers 1985, V21(6), P614
(2) Uomi; US 5179567 1993
(3) White; US 4809290 1989

L2 ANSWER 6 OF 24 CAPLUS COPYRIGHT 2003 ACS on STN
Full Text | Citing References

AN 2001:495775 CAPLUS
TI Method for **coating** facet edges of an optoelectrical device
IN Dautartas, Mindaugas Fernand; Freund, Joseph Michael; Romero, Dennis Mark
PA Lucent Technologies, Inc., USA
SO U.S., 10 pp.
CODEN: USXXAM
DT Patent
LA English
IC ICM B05D005-12
NCL 427163200; 427126300; 427282000; 427284000
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6258403	B1	20010710	US 1999-397030	19990916
PRAI	US 1999-397030		19990916		

AB A holding apparatus including a fixture is described. The fixture of the holding apparatus, which receives a semiconductor **laser bar** for optical **coating**, includes a base and a pair of walls. The walls and the base have inner surfaces, and the walls have a top surface upon which the **laser bar** rests. An extending portion of the semiconductor **laser bar** fits in a cavity formed by the base and the walls. The facet edges of the **laser bar** do not extend horizontally beyond the walls of the fixture. A **coating** apparatus applies a **coating** to the facet edges of the **laser bar** without contacting any **coating** material on the extending portion.
RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Blonder; US 5179609 1993
(2) Chakrabarti; US 5911830 1999 CAPLUS
(3) Dautartas; US 5550088 1996
(4) Dautartas; US 5935451 1999 CAPLUS
(5) Freund; US 6026557 2000
(6) Freund; US 6131263 2000
(7) Rizzo; US 5989637 1999
(8) Stark; US 4695486 1987
(9) Williams; US 5840122 1998

L2 ANSWER 7 OF 24 CAPLUS COPYRIGHT 2003 ACS on STN
Full Text | Citing References

AN 2001:247090 CAPLUS
TI The end face method of processing of the semiconductor laser componentand the jig which is used for that. [Machine Translation].
IN Agui, Hiroshi
PA Nec Kansai, Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF

DT Patent
LA Japanese
IC ICM H01S005-028
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001094194	A2	20010406	JP 1999-269748	19990924
PRAI	JP 1999-269748		19990924		

AB [Machine Translation of Descriptors]. The semiconductor laser component exposing end face 2 A and 2 B, plural end face **coat** being able to designate the shade as the occasion where treats, in the **laser bar** 1 which is connected, it decreases the trouble where film thickness becomes thin, forms a membrane on the electrode surface. Spacer bar 58 being regulated, the site spacer bar support 53 of the pair which possesses insertion possible slit 52 opposing and to be arranged slit 52, the one terminal side to be combined locked in combined section and 54 inserting spacer bar 58 in slit 52 in the framework body 51 which forms the letter condition of the R, mount, the work in order for the both ends surface to protrude, of mounting **laser bar** 1 on that surface over again, **laser bar** to make a state where accumulates with 1 and spacer bar 58 alternately, hold down make keep with the holding down part and, supplying the jig to the sputtering device in that state, on the on one hand end face The formation it does the specified membrane, maintaining a state where is kept, does sputtering membrane vis-a-vis the other end face.

L2 ANSWER 8 OF 24 CAPLUS COPYRIGHT 2003 ACS on STN

Full Text | Citing References

AN 2000:768780 CAPLUS
TI Production method of semiconductor laser component, and packaging method of semiconductor laser component. [Machine Translation].
IN Toude, Hiroshi
PA Sharp Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM H01S005-028
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000307183	A2	20001102	JP 1999-117479	19990426
PRAI	JP 1999-117479		19990426		

AB [Machine Translation of Descriptors]. It makes that secede the **laser bar** companion easily after the **coating** film formation possible. On the semiconductor substrate, the laser component it is not, in bar condition plural to cleave process and the aforementioned semiconductor substrate which the laminate structure which includes the optical waveguiding road the formation are done, removes the part in angle of one side of the cleavage plane of the aforementioned **laser bar** the process which the **coating** membrane the formation is done and, in the production method of the semiconductor laser component which is included at least on the cleavage plane of this **laser bar**, in order for the part where angle is removed to face to the same unidirection, arranging the plural **laser bars**, arranging, the formation doing the **coating** membrane on the aforementioned cleavage plane, it designates that becomes as feature.

L2 ANSWER 9 OF 24 CAPLUS COPYRIGHT 2003 ACS on STN

Full Text | Citing References

AN 1999:746806 CAPLUS
TI Method and apparatus for retaining and releasing **laser bars** during a facet **coating** operation
IN Freund, Joseph M.; Przybylek, George J.; Romero, Dennis M.
PA Lucent Technologies, Inc., USA

SO U.S.
CODEN: USXXAM
DT Patent
LA English
IC ICM H01L021-00
NCL 438029000; 118728000; 118729000
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5989932	A	19991123	US 1998-123520	19980728
PRAI	US 1998-123520		19980728		

AB An apparatus and process for retaining **laser bars** during a facet **coating** operation and releasing the bars after the conclusion of the facet **coating** operation. A multitude of spacers are positioned with **laser bars** therebetween. Each spacer includes an upper and lower fixture blade. The spacers are compressed together, thus sandwiching the **laser bars**, during the facet **coating** operation. After release of the compressive force, adhered **laser bars** are removed by moving one of the fixture blades relative to the other fixture blade. Movement can be along the longitudinal axis of the blades, perpendicular to the longitudinal axis, or rotation about a pivot axis. Further, movement can include elevation of one blade, or an end of one blade, relative to the other blade.

L2 ANSWER 10 OF 24 CAPLUS COPYRIGHT 2003 ACS on STN

Full Text | Citing References

AN 1999:728370 CAPLUS
DN 131:344037
TI Jig for surface treatment of semiconductor laser device
IN Genei, Koichi; Sato, Fumiaki; Iida, Kiyoji
PA Toshiba Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM H01S003-18
ICS C23C014-50; C23C016-44
CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 75
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 11317565	A2	19991116	JP 1998-124368	19980507
PRAI	JP 1998-124368		19980507		

AB The jig for forming optical films on **laser bar** edge faces comprises alternately laminated **laser bars** and spacers having cut regions with specified shape for preventing the **laser bar** edge face corners from being shielded in film formation by CVD or sputter deposition. Uniform films can be formed on the laser device edge faces by using the jig.
ST semiconductor laser device film formation jig; regulated shape spacer **laser bar** treatment
IT Ceramics
Coating process
Jigs
Semiconductor lasers
Sputtering
Vapor deposition process
(jig for surface treatment of semiconductor laser device characterized by shape of spacers placed among **laser bars**)
IT 1303-00-0, Gallium arsenide, uses 7440-21-3, Silicon, uses
RL: DEV (Device component use); USES (Uses)
(semiconductor, spacer; jig for surface treatment of semiconductor laser device characterized by shape of spacers placed among

laser bars)

IT 409-21-2, Silicon carbide, uses 1344-28-1, Alumina, uses 7439-98-7, Molybdenum, uses 7440-32-6, Titanium, uses 12597-68-1, Stainless steel, uses 24304-00-5, Aluminum nitride
RL: DEV (Device component use); USES (Uses)
(spacer; jig for surface treatment of semiconductor laser device characterized by shape of spacers placed among **laser bars**)

L2 ANSWER 11 OF 24 CAPLUS COPYRIGHT 2003 ACS on STN

Full Text | Citing References

AN 1999:383940 CAPLUS
DN 131:26069
TI Method and fixture for **laser bar** facet **coating**
IN Chakrabarti, Utpal Kumar; Chen, Paul Sangone; Przybylek, George John; Rinaudo, Dominic Paul
PA Lucent Technologies Inc., USA
SO U.S., 12 pp.
CODEN: USXXAM
DT Patent
LA English
IC ICM C23C014-00
NCL 118503000
CC 75-1 (Crystallography and Liquid Crystals)
Section cross-reference(s): 73, 76
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5911830	A	19990615	US 1997-844455	19970418
	US 6037006	A	20000314	US 1999-237057	19990126
PRAI	US 1997-844455		19970418		

AB Holders for a plurality of devices, esp. **laser bars**, are described which comprise a plurality of members arranged adjacent to each other and translatable along an axis, ends of adjacent members cooperable with one another so that when one member is displaced along the axis, the other members are sequentially displaced in the same direction along the axis, adjacent members developing device-receiving spaces when moved apart and closing the spaces when moved closer together; and a bias member (e.g., a spring) cooperable with ≥1 of the plurality of members to bias the members to close device-receiving spaces between adjacent members to capture devices received therein. In particular, the holders may comprise first and second channels; a plurality of web slats, each having first and second ends and first and second device engaging surfaces, the ends of the web slats received in resp. channels and cooperating with ends of adjacent web slats in the same channel (the web slats are secured at one end of the channels and otherwise movable along the channels); and a bias member cooperating with one of the web slats to bias the web slats toward the end of the channels where the web slats are secured. The holders may be used for securing substantially parallelepiped devices having one or more surfaces for **coating**. Application to **coating** of semiconductor laser facets is indicated.

ST semiconductor laser facet **coating** holder; film deposition multiple substrate mounting app; vacuum deposition multiple substrate mounting app
IT Optical films
(holders for multiple devices for deposition of)
IT Semiconductor device fabrication
(holders for multiple devices for film deposition in)
IT Semiconductor lasers
(holders for multiple devices for film deposition on facets of)
IT Vapor deposition apparatus
(holders for multiple substrates for film deposition)
RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE
(1) Anon; DE 3418332 A1 1985

(2) Anon; JP 63-028859 1988 CAPLUS
(3) Anon; JP 63-308922 1988
(4) Anon; JP 03268382 1991
(5) Anon; EP 0615824 A1 1994
(6) Bauer; US 5154333 1992
(7) Broom; US 5171717 1992
(8) Cowden; US 4391696 1983
(9) Gasser; US 5063173 1991
(10) Moran; US 4397724 1983 CAPLUS

L2 ANSWER 12 OF 24 CAPLUS COPYRIGHT 2003 ACS on STN

Full Text | Citing References

AN 1999:356277 CAPLUS
DN 131:151149
TI Highly reliable 40-W cw InGaAlAs/GaAs 808-nm **laser bars**
AU Hanke, Christian; Korte, Lutz; Acklin, Bruno D.; Luft, Johann; Groetsch, Stefan; Herrmann, Gerhard; Spika, Zeljko; Marciano, Marcel; DeOdorico, Bernhard; Wilhelmi, Jens
CS Siemens AG Corp. Research, Munich, Germany
SO Proceedings of SPIE-The International Society for Optical Engineering (1999), 3628(In-Plane Semiconductor Lasers III), 64-70
CODEN: PSISDG; ISSN: 0277-786X
PB SPIE-The International Society for Optical Engineering
DT Journal
LA English
CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 76
AB The fundamental question whether Al-free semiconductor lasers in the 808 nm band are significantly more reliable than Al-contg. lasers is still open. The authors have fabricated and tested high-power InGaAlAs/GaAs-lasers which show excellent reliability data at and >40 W cw. The laser structure consists of an InGaAlAs-double-quantum well (DQW) as active layer embedded in a large optical cavity (LOC) waveguide structure. The layers were grown in a low pressure OMVPE (LP-OMVPE) reactor using high quality precursors. Asym. **coated** bars with a width of 1 cm contg. 25 groups of 200 μm wide emitters were mounted junction down on actively cooled heatsinks. At a heatsink temp. of 18° the slope-efficiency is 1.1-1.2 W/A. Due to the low series-resistance of 2.2 mΩ and the low internal losses in the range of 1.7 cm^{-1} the overall efficiency at 40 W continuous-wave reaches 50. Lifetime studies over 33 0000 h accumulated device hours show that the **laser bars** with a resonator length of 900 μm can be operated at 40 W with high reliability. The mean degrdn. rate is -0.11/kh. This result emphasizes that Al-contg. lasers can also have a very high reliability usually claimed for Al-free lasers. As a consequence of these encouraging results the authors will start further lifetime tests at 50 to 60 W.
ST cw aluminum gallium indium arsenide **laser bar**
IT Metalorganic vapor phase epitaxy
Semiconductor lasers
(highly reliable 40-W cw InGaAlAs/GaAs 808-nm **laser bars**)
IT 106804-30-2, Aluminum gallium arsenide al0.6ga0.4as
RL: DEV (Device component use); USES (Uses)
(cladding; highly reliable 40-W cw InGaAlAs/GaAs 808-nm **laser bars**)
IT 1303-00-0, Gallium arsenide, properties 106070-22-8, Aluminum gallium indium arsenide ((Al,Ga,In)As)
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(highly reliable 40-W cw InGaAlAs/GaAs 808-nm **laser bars**)
IT 106070-09-1, Aluminum gallium arsenide al0.3ga0.7as
RL: DEV (Device component use); USES (Uses)

(waveguiding layer; highly reliable 40-W cw InGaAlAs/GaAs 808-nm **laser bars**)

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Garbuzov, D; IEEE J Quantum Electron 1991, V27(6), P1531 CAPLUS
(2) Osenbrug, A; Proceeding of SPIE V3284, P20
(3) Todd, S; Photonics Spectra 1998, V32(5), P152
(4) Wade, J; Appl Phys Lett 1997, V70(2), P149 CAPLUS
(5) Waters, R; Prog Quant Electr 1991, V15, P153 CAPLUS
(6) Yellen, S; IEEE Phot Tech Letters 1992, V4(8), P829

L2 ANSWER 13 OF 24 CAPLUS COPYRIGHT 2003 ACS on STN

Full Text | Citing References

AN 1997:616987 CAPLUS

DN 127:227137

TI Method of making a GaAs-based laser comprising a facet **coating** with gas phase sulfur

IN Chakrabarti, Utpal Kumar; Hobson, William Scott; Ren, Fan; Schnoes, Melinda Lamont

PA Lucent Technologies Inc., USA

SO U.S., 4 pp.
CODEN: USXXAM

DT Patent

LA English

IC ICM H01L021-20

NCL 438033000

CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5668049	A	19970916	US 1996-692834	19960731
	EP 822628	A1	19980204	EP 1997-305488	19970722
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
	JP 10075020	A2	19980317	JP 1997-206669	19970731
	JP 3221658	B2	20011022		
PRAI	US 1996-692834	A	19960731		

AB In a method of making a GaAs-based semiconductor laser, a fully processed wafer is cleaved, typically in the ambient atm., into **laser bars**, the **laser bars** are loaded into an evacuable deposition chamber (preferably an ECR CVD chamber) and exposed to a H2S plasma. Following the exposure, the cleavage facets are **coated** in the chamber with a protective dielec. (preferably silicon nitride) layer. The method can be practiced with high through-put, and can yield lasers (e.g., 980 nm pump lasers for optical fiber amplifiers) capable of operation at high power. The authors suggest that hydrogen in the plasma removes the native oxides from the facets, and that sulfur in the plasma bonds with Ga and As, thereby lowering the surface state d. of the facets. Since essentially no etching of the facets result from the exposure to the H2S plasma, the optical quality of the cleaved facets is preserved, overcoming one of the shortcomings of at least some prior art passivation processes.

ST gallium arsenide laser fabrication passivation; semiconductor laser fabrication facet passivation; hydrogen sulfide plasma laser facet passivation

IT Semiconductor lasers
Semiconductor lasers
(IR; laser fabrication with facet passivation using hydrogen sulfide plasma)

IT Passivation
Semiconductor lasers
(laser fabrication with facet passivation using hydrogen sulfide plasma)

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IT   IR lasers
     IR lasers
        (semiconductor; laser fabrication with facet passivation using hydrogen
        sulfide plasma)
IT   1303-00-0, Gallium arsenide, uses   12033-89-5, Silicon nitride, uses
     106070-25-1, Gallium indium arsenide   106312-00-9, Gallium indium
     phosphide
     RL: DEV (Device component use); PEP (Physical, engineering or chemical
     process); PROC (Process); USES (Uses)
        (laser fabrication with facet passivation using hydrogen sulfide
        plasma)
IT   7783-06-4, Hydrogen sulfide, uses
     RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical
     process); PROC (Process); USES (Uses)
        (laser fabrication with facet passivation using hydrogen sulfide
        plasma)


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